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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,268	04/18/2006	Koichi Nakano	Q94054	3632

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EXAMINER	
ARIANI, KADE	

ART UNIT	PAPER NUMBER
1651	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,268	NAKANO ET AL.	
	Examiner	Art Unit	
	KADE ARIANI	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☒ Claim(s) *5, 6, 7, 16, and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/18/2006 and 11/15/12007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-22 are pending in this application and were examined on their merits.

Objections

The disclosure is objected to because of the following informalities:

The use of “to” in the recitation “cells adhered to by mucus” in claim 5 is unnecessary.

The word --uterine-- in claims 6 and 7 and in the specification (page 7 line 4) is misspelled as “uterin”.

The use of preposition “of” instead of “for” in the phrase “a reagent kit of treating…” in claims 16 and 18 is incorrect.

Appropriate correction is required.

Double Patenting Rejections

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or

would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 3, and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6 and 7 of Nakano et al. (US application No.10/574,471, US Pub. No. 20070054258). Although the conflicting claims are not identical, they are not patentably distinct from each other because,

Claims 6 and 7 of (US 20070054258) recite a method of treating cells comprising, removing mucus from a specimen containing cells and the mucus, wherein said removing step is conducted by treating the specimen with a solution containing cysteine and/or a compound derived therefrom, and wherein the cells comprise uterine cervix cells.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method as disclosed by Nakano et al. ('471) to provide the method of treating cells of the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4, 9, 11, 13, and 15 rejected under 35 U.S.C. 102(b) as being anticipated by Ensley et al. (Cytometry, 1987, Vol. 8, p.479-487).

Claims 4, 9, 11, 13, and 15 are drawn to a method of treating cells comprising the steps of treating a specimen containing cells with a solution containing an aldehyde compound to stabilize the cells; and treating the specimen with a protease after stabilizing cells in the specimen, cells preserved in an alcohol solution, and paraformaldehyde, and preparing a sample for flow cytometry.

Ensley et al. disclose a method a method of treating cells comprising the steps of treating a specimen containing cells with a solution containing an aldehyde compound to stabilize the cells; and treating the specimen with a protease after stabilizing cells in

the specimen, cells preserved in an alcohol solution, and paraformaldehyde, and preparing a sample for flow cytometry (Abstract, Introduction 1st column 1st paragraph, p.481 1st column last paragraph, 2nd column 2nd paragraph, and Table 1., and p.482 1st column 1st paragraph).

Ensley et al. therefore clearly anticipate the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 6, 8, 10, 12, 14, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ensley et al. (Cytometry, 1987, Vol. 8, p.479-487) in view of Komuro et al. (in IDS, Gasteroeterologia Japonica, 1991, Vol. 26, No. 5, p.582-587) and further in view of Ishii et al. (Cancer Cytopathol., 1999, Vol. 87, p.245-253).

Claims 1-3, 6, 8, 10, 12, and 14 are drawn to a method of treating cells comprising the steps of: removing mucus from a specimen containing cells and the mucus; and after the removing step, treating the specimen with a solution containing an aldehyde compound to stabilize the cells, the method further comprising the step of treating the specimen with a protease after stabilizing cells in the specimen, wherein said removing step is conducted by treating the specimen with a solution containing

cysteine and/or a compound derived therefrom, wherein the cells comprise uterine cervix cells, wherein the cells are preserved in an alcohol solution, wherein the aldehyde compound is paraformaldehyde, and a method of preparing a sample for flow cytometry.

Claims 16-22 are drawn to a kit for treating a specimen containing cells and mucus comprising, a reagent containing cysteine and/or a compound derived therefrom, and a reagent containing an aldehyde compound, further comprising a third reagent a protease, wherein the protease is collagenase wherein the aldehyde compound is paraformaldehyde.

Ensley et al. teach a method of treating cells comprising, dissociating cells by treating the specimen with a mucolytic agent, treating the specimen with a solution containing an aldehyde compound, treating the specimen with a protease, cells are preserved in an alcohol solution, paraformaldehyde, protease (collagenases), and a method of preparing a sample for flow cytometry (Abstract, p.481 1st column last paragraph and Table 1., and 2nd column 2nd paragraph, p.482, 1st column 1st paragraph).

Ensley et al. further teach the presence of intercellular connections render the production of isolated single cells and thus the measurement of cellular parameters by flow cytometry especially difficult (p.479 1st column 1st paragraph).

Ensley et al. also teach treating cells with DTT, a mucolytic agent which disrupts disulfide bonds, (p. 481, 2nd column 2nd paragraph).

Ensley et al. do not teach treating a specimen containing cells and the mucus with a solution of cysteine-containing compound. However, Komuro et al. teach a

method of removing mucus from a specimen (gastric mucosa) containing cells and mucus, by treating the specimen with a solution containing N-acetylcysteine (NAC), a mucolytic agent, without damage to underlying surface epithelium (Abstract).

Komuro et al. teach the possibility of using the method with other mucus secreting cells and (p.587 1st column end paragraph).

Ensley et al. do not teach removing mucus from a specimen containing uterine cervix cells. However, Ishii et al. teach the adenoma malignum of the uterine cervix, also referred to as the mucinous type of minimal deviation adenocarcinoma (mucinous MDA) of the uterine cervix is a unique neoplasm that is difficult to diagnose because of the deceptive benign appearance of the tumor cells. The difficulty experienced in a cytologic diagnosis of mucinous MDA, is the result of several factors including the relative rarity of this tumor and the infrequent of exposure of the tumor tissues to the cervical mucosal surface (p.245 Introduction and p.246 1st column).

Therefore, a person of ordinary skill in the art would have been motivated to modify the method as taught by Ensley et al. by substituting the mucolytic agent with the mucolytic agent as taught by Komuro et al. to provide a method for treating cells comprising removing the mucus from uterine cervix cells. Because substitution of one known element for another would have been yielded predictable results to one of ordinary skill in the art at the time the invention was made. The motivation to remove the mucus from uterine cervix cells as taught by Ishii et al. would be the difficulty experienced in a cytologic diagnosis of tumor cells due to the infrequent exposure of the tumor tissue to the cervical mucosal surface.

Furthermore, once a method of treating cells was established, providing a reagent kit of the necessary items for carrying out the method would become obvious.

Claims 4, 5, 7, 9, 11, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ensley et al. (Cytometry, 1987, Vol. 8, p.479-487) in view of Ishii et al. (Clinica Chimica Acta, 2001, Vol.312, p.231-233).

Claims 4, 5, 7, 9, 11, 13, and 15 are drawn to a method of treating cells comprising the steps of treating a specimen containing cells with a solution containing an aldehyde compound to stabilize the cells; and treating the specimen with a protease after stabilizing cells in the specimen, cells adhered by mucus, uterine cervix cells, cells preserved in an alcohol solution, and paraformaldehyde.

As mentioned above Ensley et al. teach the limitations of claims 4, 9, 11, 13, and 15.

Ensley et al. do not teach treating cells adhered by mucus, wherein cells comprise uterine cervix cells. However, Ishii et al. teach the difficulty experienced in a cytologic diagnosis of mucinous MDA. Ishii et al. teach tumor cells or metaplastic cells and related lesions do not necessarily appear in cervical secretions because these cells may be only located deep within the cervical tissue in the early stages and may not be exposed on the mucosal surface (p.245 Introduction and p.231 1st column, 2nd paragraph, p.232, 1st column 4th paragraph).

Therefore, a person of ordinary skill in the art would have been motivated to modify the method as taught by Ensley et al. by removing the mucus from a specimen containing uterine cervix cells as taught by Ishii et al. to provide a method for treating

uterine cervix cells adhered by mucus. The motivation would be to determine an optimum technique to prepare uterine cervix cells located deep within the cervical tissue for flow cytometry analysis.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kade Ariani whose telephone number is (571) 272-6083. The examiner can normally be reached on 9:00 am to 5:30 pm EST Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon B Lankford Jr/
Primary Examiner, Art Unit 1651

Kade Ariani
Examiner
Art Unit 1651